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WPNSSB

TSCNG-E

TEST SET, TELETYPE DISTORTION

1. GENERAL. This procurement requires a rackmountable, modular type distortion test set capable of generating, measuring, and analyzing data and teletypewriter signals.

2. CLASSIFICATION. Type II, Class 5, Style FG, and Color R in accordance with MIL-T-28800 for shipboard applications.

3. OPERATIONAL REQUIREMENTS. The equipment shall be capable of accepting inputs (analyzer) and providing outputs (generator) over a range of 37.5 to 9,600 baud for the message forms, pattern types, and modes of operation specified below. The following specific baud rates shall be included in both the generator and analyzer: 37.5, 45.5, 50, 61.12, 74.2, 100, 110, and 75 x 2En where n is an integer from 0 to 7.

3.1 Analyzer input signals. The equipment shall be capable of accepting both high level and low level signals. This interface may be provided by the use of bridging and series inputs.

3.1.1 Bridging input. The bridging input, for low level signals (0.5 to 25 Vdc polar), shall have an impedance of 47 to 68 kilohms. This input shall be provided with a switch-selectable input filter for use with data rates of 75 baud or less.

3.1.2 Series input. High level signals: 20 to 60 mA neutral, 20 to 30 mA polar. This input shall have a means of reversing the polarity of the incoming signal.

3.1.3 Inputs. 5, 6, 7, and 8 level codes, either synchronous or asynchronous.

3.1.3.1 Synchronous operation. The equipment shall be provided with a means of phase locking internal timing with the incoming signal.

3.1.3.2 Asynchronous operation. The equipment shall have a single-unit start as well as stop selections at intervals of 1.0, 1.5, and 2.0 units.

3.1.4 External frequency input. The equipment shall be capable of operation from an external frequency source.

3.2 Analyzer distortion measurements. The equipment shall analyze and indicate, in percentage, the following distortions:

a. Bias or end distortion: The equipment shall indicate the average of either bias or end distortion, as selected, and whether it is marking or spacing.

b. Total, early, late distortion: The equipment shall provide a peak distortion reading for all space-to-mark and mark-to-space transitions and shall select the total (all), early, or late distortion transitions. Peak distortion measurements shall be retained on the equipment display until the distortion being monitored increases or until a selected automatic (3 to 5 seconds nominal) or manual reset is initiated.

3.2.1 Parity. The equipment shall have odd and even parity check capability.

3.2.2 Type display. The equipment shall be provided with a D'Arsonval type meter capable of reading

percent distortion in 1% increments over a range of 0 to at least 49%.

3.2.3 Display accuracy. ±2% FS.

3.2.4 Signal state. The equipment shall be provided with an input signal indicator.

3.2.5 Mark-space distortion. The equipment shall be provided with marking and spacing distortion indicators.

3.3 Generator, output functions. The generator shall be capable of producing synchronous and asynchronous 5, 6, 7, or 8 level code. Asynchronous operation shall have single-unit start as well as stop selections at intervals of 1.0, 1.5, and 2.0 units.

3.3.1 Data generation. The equipment shall be capable of generating the following selectable test data messages.

a. Standard "Fox" message (ITA2 and ASCII).

b. Selected programmed characters (1 to at least 4).

c. Message and selected characters.

d. Steady mark.

e. Steady space.

f. 1:1 continuous reversal.

3.3.2 Output keying. The equipment shall be provided with the following output capabilities:

a. Low level polar ±6V (±1V).

b. High level, fully isolated polar and neutral keyer rated for a nominal 100 to 270V at 40 to 70 mA.

3.3.3 Distortion. The equipment shall be capable of generating the following distortion in 1% increments over a range of at least 0 to 49%:

a. Marking bias.

b. Spacing bias.

c. Switching bias.

d. Marking end.

e. Spacing end.

4. GENERAL REQUIREMENTS.

4.1 Power source. MIL-T-28800 nominal power source requirements are invoked. Operation at 400 Hz is not required. Maximum power consumption: 100W.

4.2 Weight. 20 kg (44 lb) maximum.

4.3 Lithium batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.

4.4 Carrying Case. A carrying case shall be provided for transportation of the specified equipment.